IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-25. (Canceled)

26. (Previously Presented) A graphic computing method comprising:

dividing a unit shape of a surface of an object present in a three-dimensional space into a plurality of subpolygons two-dimensionally arranged in terms of their neighboring relationship and having an arbitrary size, to generate a subpolygon mesh;

executing at least one of arithmetic operations of vertex displacement, coordinate conversion, coloring, and shading using various programs in units of vertexes of subpolygons of the subpolygon mesh to obtain parameters required for drawing;

computing drawing data in units of pixels on the basis of the parameters and picture data for texture mapping;

storing in a frame memory the drawing data as picture data together with at least data for texture mapping required for computing the drawing data;

reading out at least the picture data for texture mapping from the frame memory via a frame memory readout route;

reading at least the picture data for texture mapping corresponding to each vertex of the subpolygon mesh from the frame memory via the frame memory readout route; and

computing the parameters required for drawing in units of pixels of the subpolygons for each vertex of the subpolygon meshes using the read data.

27. (Previously Presented) The method according to claim 26, further comprising temporarily storing in a cache the data read via the frame memory readout route.

28. (Previously Presented) The method according to claim 26, which includes executing respectively arithmetic operations for computing the parameters by means of a plurality of processing elements, and performing simultaneously the arithmetic operations for a plurality of vertexes in accordance with an identical program.

29. (Previously Presented) The method according to claim 28, which includes repeating the process for simultaneously making the arithmetic operations for each row of the subpolygon mesh in correspondence with the number of rows of the subpolygon mesh.

30. (Previously Presented) The method according to claim 28, which includes linearly arranging the plurality of processing elements and preparing data transfer routes for connecting the processing elements neighboring in an arrangement direction, all the processing elements simultaneously transferring at least some of internal data to the processing elements neighboring in the arrangement direction via the data transfer routes.

31. (Previously Presented) The method according to claim 30, further comprising constructing the arithmetic operation results of the plurality of processing elements into a consecutive triangle strip, and transferring the triangle strip for the computing of drawing data.

32. (Previously Presented) The method according to claim 26, wherein the computing the drawing

data includes using mapping in units of vertexes and mapping in units of pixels together.

33. (Previously Presented) A graphic computing method comprising:

dividing by means of a divider a unit shape of a surface of an object present in a three-dimensional space into a plurality of subpolygons which are two-dimensionally arranged in terms of their neighboring relationship and have an arbitrary size, to generate a subpolygon mesh;

executing by means of a plurality of vertex processors at least one of arithmetic operations of vertex displacement, coordinate conversion, coloring, and shading using various programs in units of vertexes of subpolygons of the subpolygon mesh to obtain parameters required for drawing;

exchanging between an output of the divider and inputs of the plurality of vertex processors;

computing drawing data in units of pixels on the basis of the parameters computed by the vertex processors and picture data for texture mapping;

storing in a frame memory the drawing data as picture data together with at least data for texture mapping required to compute the drawing data;

reading out at least the picture data for texture mapping from the frame memory via a frame memory readout route;

reading at least the picture data for texture mapping corresponding to each vertex of the subpolygon mesh from the frame memory via the frame memory readout route; and

computing the parameters required for drawing in units of pixels of the subpolygons

for each vertex of the subpolygon meshes using the read data.

34. (Previously Presented) The method according to claim 33, further comprising temporarily storing in a cache the data read via the frame memory readout route.

35. (Previously Presented) The method according to claim 33, wherein computing the parameters includes executing respectively arithmetic operations for computing the parameters required for drawing in units of pixels of the subpolygons for each vertex of the subpolygon mesh, and simultaneously making the arithmetic operations for a plurality of vertexes in accordance with an identical program.

36. (Previously Presented) The method according to claim 35, which includes repeating the process for simultaneously making the arithmetic operations for each row of the subpolygon mesh in correspondence with the number of rows of the subpolygon mesh.

37. (Previously Presented) The method according to claim 35, which includes linearly arranging a plurality of processing elements and preparing data transfer routes for connecting the processing elements neighboring in an arrangement direction to execute the arithmetic operations, all the processing elements simultaneously transferring at least some of internal data to the processing elements neighboring in the arrangement direction via the data transfer routes.

38. (Previously Presented) The method according to claim 35, further comprising constructing the arithmetic operation results of the plurality of processing elements into a consecutive triangle strip, and transferring the triangle strip for the computing of drawing data.

39. (Previously Presented) The method according to claim 33, wherein the computing the drawing data includes using mapping in units of vertexes and mapping in units of pixels together.

40. (Previously Presented) A graphic computing method comprising:

dividing by means of each of a plurality of shape dividers a unit shape of a surface of an object present in a three-dimensional space into a plurality of subpolygons which are two-dimensionally arranged in terms of their neighboring relationship and have an arbitrary size, to generate a subpolygon mesh;

distributing data of the unit shape to the plurality of shape dividers;

executing by means of each of a plurality of vertex processors at least one of arithmetic operations of vertex displacement, coordinate conversion, coloring, and shading using various programs in units of vertexes of subpolygons of the subpolygon mesh to obtain parameters required for drawing;

exchanging and connecting outputs of the plurality of shape dividers and inputs of the plurality of vertex processors;

computing drawing data in units of pixels on the basis of the parameters computed by the vertex processors and picture data for texture mapping;

storing in a frame memory the drawing data as picture data together with at least data for texture mapping required to compute the drawing data;

reading out at least the picture data for texture mapping from the frame memory via the frame memory readout route, and transferring the readout picture data to the vertex processors;

reading at least the picture data for texture mapping corresponding to each vertex of the subpolygon mesh from the frame memory via the frame memory readout route; and

computing the parameters required for drawing in units of pixels of the subpolygons for each vertex of the subpolygon meshes using the read data.

41. (Previously Presented) The method according to claim 40, further comprising temporarily storing in a cache the data read via the frame memory readout route.

42. (Previously Presented) The method according to claim 40, which includes executing respectively arithmetic operations for computing the parameters required for drawing in units of pixels of the subpolygons for each vertex of the subpolygon mesh, and simultaneously making the arithmetic operations for a plurality of vertexes in accordance with an identical program.

43. (Previously Presented) The method according to claim 42, which includes repeating the process for simultaneously making the arithmetic operations for each row of the subpolygon mesh in correspondence with the number of rows of the subpolygon mesh.

44. (Previously Presented) The method according to claim 42, which includes linearly arranging a plurality of processing elements to execute the arithmetic operations and preparing data transfer routes for connecting the processing elements neighboring in an arrangement direction to execute the arithmetic operations, all the processing elements simultaneously transferring at least some of internal data to the processing elements neighboring in the arrangement direction via the data transfer routes.

45. (Previously Presented) The method according to claim 42, further comprising constructing the arithmetic operation results of the plurality of processing elements into a consecutive triangle strip, and transferring the triangle strip for the computing of drawing data.

46. (Previously Presented) The method according to claim 40, wherein the plurality of shape dividers share a program memory which stores a processing program.

47. (Previously Presented) The method according to claim 40, wherein the computing the drawing data includes using mapping in units of vertexes and mapping in units of pixels together.

48. (Previously Presented) A graphic computing method comprising:

executing at least one of arithmetic operations of vertex displacement, coordinate conversion, coloring, and shading using various programs in units of a vertex to obtain parameters required for drawing, the vertex representing a vertex of a polygon obtained from a unit shape of a surface of an object present in a three-dimensional space;

computing drawing data in units of pixels on the basis of the parameters and picture data for texture mapping;

storing in a frame memory the drawing data as picture data together with at least data for texture mapping required to compute the drawing data; and

reading out at least the picture data for texture mapping from the frame memory via the frame memory readout route;

reading at least the picture data for texture mapping corresponding to the vertex from the frame memory via the frame memory readout route; and

computing the parameters required for drawing in units of pixels of the polygon for the vertex of the polygon using the read data.

49. (Currently Amended) A graphic computing method comprising:

performing at least one of arithmetic operations of vertex displacement, coordinate conversion, coloring, and shading using various programs in units of vertexes of subpolygons of a subpolygon mesh to obtain parameters required for drawing, the subpolygon mesh being generated by dividing a unit shape of a surface of an object present in a three-dimensional space;

computing drawing data in units of pixels on the basis of the parameters and picture data for texture mapping; and

storing in a frame memory the drawing data as picture data together with at least data for texture mapping required to compute the drawing data;

reading out at least the picture data ~~far~~ for texture mapping from the frame memory via a frame memory readout route;

reading at least the picture data for texture mapping corresponding to each vertex of the subpolygon mesh from the frame memory via the frame memory readout route; and

computing the parameters required for drawing in units of pixels of the subpolygons for each vertex of the subpolygon meshes using the read data.